



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

RBW6405G02331-3G-13
Job Sheet 171448



Part No: RBW6405G02331-3G-13

Job Qty: 4 ea

Part Name: Head



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/1/18

Job Tracking No:

Due Date: 2/9/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG RBW6405G02331-3G-13 REV:2 IPP REV A 18.01.18 NEW ISSUE RQ VERIFIED BY DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	4 Ea		2/8/18	0.00	0.00	Start Up Machining-4		SL 18-3-5
120	CNC Lathe	4 pcs		2/9/18	0.00	0.33	MORI SL-154		SL
170	QC	4 pcs		2/9/18	0.00	0.00	QC2 Machining-5		SL
180	QC	4 pcs		2/9/18	0.00	0.00	QC8 Machining-5		J.C. 2-18-03-07
220	Packaging	4 pcs		2/9/18	0.00	0.00	Packaging3-1 GA		DAS
230	QC21-SA	4 Ea		2/9/18	0.00	0.00	QC21		21 MAR 12 2018

Part Op 120 - 1-Machine as per folio FB803 FOLIO REV: _____ DWG REV: _____ 2-Debur 1-80
Descriptions: 220 - IDENTIFY AND STOCK

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
MT-4140QT-R0.625	AISI 4140 Quenched &Tempered Steel Round Bar 0.625" Dia.	.1600 ft (.04 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	MT-4140QT-R0.625	0	0	0
	3042214	22		

Part Specifications

Specifications could not be found.



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Plex 2/1/18 11:01 AM Dart.lajeunesse.marie

Container No: S047687



Part: RBW6405G02331-3G-13

Job No: 171448

Serial No/Batch: S047687

Revision: 2

Inspector:

Date: 03/05/18

5042 214

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

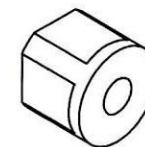
QA Closed: _____ Date: _____

Work Order update only ☐

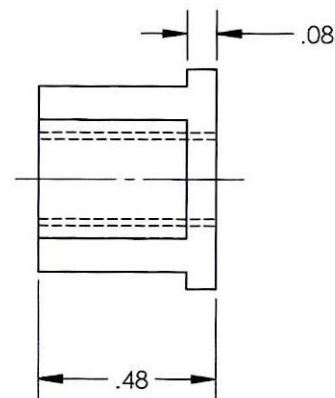
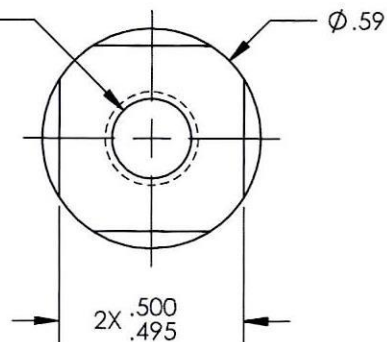
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
A		-13 ADDED MISSING DIM 1/4-28 UNF -2B.	6/9/2014	DPD	GE
2	17-0032	-13 CH'D MATERIAL WAS 4140 IS 4140/4142. ADDED HEAT TREAT RC 28-34	1/26/2017	RJC	SM



1/4-28 UNF - 2B THRU ALL



EX-100 COPY
RETURN TO
ENGINEERING
UNLESS NOTED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
NO ORDER

171448 MJS
18-01-31

(-13)

HEAD



TITLE
T/R UPPER CONICAL RING PULLER

DWG NO. RBW6405G02331-3G-13 REV 2

MAT'L 4140/4142	UNLESS OTHERWISE SPECIFIED
HEAT TREAT RC 28-34	DIMENSIONS ARE IN INCHES
FINISH SEE -09	.XXX ± .005 FRACTIONS ± 1/8
SPEC	.XX ± .01 ANGLES ± 5°
	.X ± .1 SURFACES = 125/

DRAWN BY: CLOUGH	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: MACKOVJAK	AW139

SCALE 2:1	DATE 3/25/2010	SHEET 8 OF 9
-----------	----------------	--------------

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table border="0"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																																																																				
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																																																																				
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																																																																				
Large Fab ☐	Composite ☐	Supplier ☐																																																																					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																																
Description Work Order Deviation				Disposition				Completed By																																																															
								Lead hand / Supervisor Approval Verification																																																															
								QC / QA Coordinator Approval																																																															
Root Cause <table border="0"> <tr> <td>Environment ☐</td> <td>☐ No Re-verification</td> </tr> <tr> <td>Design ☐</td> <td>☐ Operator</td> </tr> <tr> <td>Doc/Data ☐</td> <td>☐ Offset/Setup</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>☐ Supplier</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>☐ Training</td> </tr> <tr> <td>Material ☐</td> <td>☐ Use for Testing</td> </tr> <tr> <td>Internal Transport ☐</td> <td>☐ Poor Information</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>☐ Rushing</td> </tr> <tr> <td>LOA ☐</td> <td>☐ Product Improvement</td> </tr> <tr> <td>Substation ☐</td> <td>☐ Process Improvement</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>☐ Manufacturing Process</td> </tr> <tr> <td>Misidentified ☐</td> <td>☐ Past Due</td> </tr> </table>		Environment ☐	☐ No Re-verification	Design ☐	☐ Operator	Doc/Data ☐	☐ Offset/Setup	Equip/Tooling ☐	☐ Supplier	Handling/Pre ☐	☐ Training	Material ☐	☐ Use for Testing	Internal Transport ☐	☐ Poor Information	Tribal Knowledge ☐	☐ Rushing	LOA ☐	☐ Product Improvement	Substation ☐	☐ Process Improvement	Past Expiry Date ☐	☐ Manufacturing Process	Misidentified ☐	☐ Past Due	FAULT CATEGORY <table border="0"> <tr> <td>☐ Pressure/Forced</td> <td>☐ Temperature/Cure</td> <td>☐ Power Loss/Surge</td> <td>☐ Positioned Wrong</td> </tr> <tr> <td>☐ Bending</td> <td>☐ Set-up</td> <td>☐ Folio/Program</td> <td>☐ Outside Dimensions</td> </tr> <tr> <td>☐ Centre Not Concentric</td> <td>☐ BOM/Route</td> <td>☐ Grain</td> <td>☐ Over/Under tolerance</td> </tr> <tr> <td>☐ Cracks</td> <td>☐ Broken/Damage/Defect</td> <td>☐ Weld</td> <td>☐ Part Incorrect</td> </tr> <tr> <td>☐ Crimp/Kink/Ripple/Wave</td> <td>☐ Inspection Incomplete/Unqualified</td> <td>☐ Wrong Stock Pulled</td> <td>☐ Part Lost/Missing</td> </tr> <tr> <td>☐ Cuffs</td> <td>☐ Contamination</td> <td>☐ Out of Sequence</td> <td>☐ Part Moved</td> </tr> <tr> <td>☐ Crushing</td> <td>☐ Countersink</td> <td>☐ Off-set</td> <td>☐ Drawing</td> </tr> <tr> <td>☐ Heat Treat</td> <td>☐ Cut Too Short</td> <td>☐ Mislabelled</td> <td>☐ Finish</td> </tr> <tr> <td>☐ Wave/Twist in Tube</td> <td>☐ Instructions Incomplete/Unclear</td> <td>☐ Fit/Function</td> <td>☐ Misread</td> </tr> <tr> <td>☐ Marks/Chatter</td> <td>☐ Drill Holes</td> <td>☐ Misaligned/off center</td> <td>☐ Turning Sequence</td> </tr> </table>						☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabelled	☐ Finish	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence
Environment ☐	☐ No Re-verification																																																																						
Design ☐	☐ Operator																																																																						
Doc/Data ☐	☐ Offset/Setup																																																																						
Equip/Tooling ☐	☐ Supplier																																																																						
Handling/Pre ☐	☐ Training																																																																						
Material ☐	☐ Use for Testing																																																																						
Internal Transport ☐	☐ Poor Information																																																																						
Tribal Knowledge ☐	☐ Rushing																																																																						
LOA ☐	☐ Product Improvement																																																																						
Substation ☐	☐ Process Improvement																																																																						
Past Expiry Date ☐	☐ Manufacturing Process																																																																						
Misidentified ☐	☐ Past Due																																																																						
☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong																																																																				
☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions																																																																				
☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance																																																																				
☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect																																																																				
☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing																																																																				
☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved																																																																				
☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing																																																																				
☐ Heat Treat	☐ Cut Too Short	☐ Mislabelled	☐ Finish																																																																				
☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread																																																																				
☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence																																																																				
		OTHER :																																																																					

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					